

# Association between *Helicobacter pylori* infection and lichen planus in patients referred to dermatology clinic of Ardabil Hospital

Rostami Mogaddam Majid\*, Elnaz Zahedi\*\*

Department of Dermatology, Ardebil University of Medical Sciences, Ardebil, Iran  
Medical Student, Ardebil Azad University, Ardebil, Iran

**Abstract** *Objective* To assess the association between lichen planus and *Helicobacter pylori*.

*Patients and methods* In this analytical, case-control study, 60 patients with lichen planus (confirmed by histopathology) and 60 age- and sex-matched volunteer blood donors were selected. Tests for *H. pylori* IgA and IgG antibodies were performed by ELISA.

*Results* The mean age of patients was  $36.3 \pm 12.6$  years. Of 60 patients with lichen planus, *H. pylori* IgA antibodies were positive in 46 (76.6%) patients and in 18 (30%) controls ( $p=0.001$ ). Similarly, *H. pylori* IgG antibodies were positive in 55 (91.7%) patients of lichen planus and in 44 (73.3%) controls ( $p=0.007$ ).

*Conclusion* These findings suggest that *H. pylori* may be implicated in the etiology of the lichen planus.

**Keywords**

Lichen planus, *Helicobacter pylori*.

## Introduction

Lichen planus (LP) is a cutaneous inflammatory disease of the skin and mucous membranes. Classical LP is characterized by pruritic, violaceous papules that favor the extremities. The disease has worldwide distribution and its incidence is similar in both sexes and all races.<sup>1</sup>

The exact cause of LP is not known but it is considered to be an immunologically mediated disorder; whether the foreign antigen is a virus

or a drug, remains unknown. Langerhans cells process the antigen, which is then presented to T lymphocytes.<sup>2</sup> This stimulated lymphocytic infiltrate is epidermotropic and attacks keratinocytes. During this lymphocytotoxic process, the keratinocytes release cytokines that attract more lymphocytes. This process has been referred to as the lichenoid tissue reaction. In addition, recent studies reveal a disruption in the epithelial anchoring system.<sup>3</sup>

*Helicobacter pylori* is one of the most important bacterial etiologies that has been suggested. It is one of the most common bacterial infections, affecting nearly half of the world's population. Recently, there have been some studies on the possible role of *H. pylori* infection in the pathogenesis of various extragastric diseases involving dermatologic conditions.<sup>4</sup> The aim of

---

**Address for correspondence**

Dr. Majid Rostami Mogaddam  
Assistant Professor of Dermatology  
Emam Khomeini Hospital,  
Ardebil University of Medical Sciences,  
Ardebil-IRAN  
Email: Drrostami@yahoo.com  
Ph: 00989143512482, 9845122 46687

**Table 1** Results of *Helicobacter pylori* IgA and IgG antibodies in patients of lichen planus and healthy controls.

		Cases N (%)	Controls N (%)	P value
IgA antibodies	Positive	46 (76.7)	18 (30)	0.001
	Negative	12 (23.3)	42 (60)	
IgG antibodies	Positive	55 (91.7)	44 (73.3)	0.007
	Negative	5 (8.3)	16 (26.7)	

this study was to assess the relation between *H. pylori* infection and LP in the urban population in Ardebil, Iran.

### Patients and methods

This was a case-control study. Sixty patients of LP seen by dermatologists and confirmed by histopathology were recruited in the study. Similarly, 60 age- and sex-matched healthy blood donors were selected. Those who had a history of drugs that can cause lichen planus like eruption, were excluded (in both cases and controls).

The clinical profile of patients with LP was recorded in the pro forma. Both, patient and control groups, were subjected to serological tests using ELISA for *H. pylori* IgA and IgG antibodies.

The statistical analysis was performed using SPSS16 software. The chi-square test and student's t-test were used to examine the difference in HP prevalence among the different patient groups.

### Results

Of 120 subjects, there were 60 cases and 60 controls. The age of patients ranged from 11 to 68 years of age. The mean age of patients was  $36.3 \pm 12.6$  years. 53.3% were females and 46.7% were males. There was no statistically significant difference between the two groups in terms of age and sex ( $p=0.15$ ). Classic form of

LP was the most common presentation seen in 57.7% of patients.

*H. pylori* IgA antibodies were positive in 46 (76.7%) patients and in 18 (30%) controls ( $p=0.001$ ). Similarly, *H. pylori* IgG antibodies were seen in 55 (91.7%) cases and 44 (73.3%) controls, ( $p=0.007$ ).

### Discussion

Lichen planus is a unique, common inflammatory disorder that affects the skin, mucous membranes, nails and hair. Although its etiology and pathogenesis are not fully understood, LP has been associated with multiple disease processes and agents, such as viral and bacterial infections, autoimmune diseases and medications. Studies investigating a possible role for the bacterial infection in the etiology of LP were limited and have not supported a definitive etiologic role for *H. pylori*.

The purpose of this study was to investigate the relationship between LP and *H. pylori*. As a group of 60 patients with LP and 60 healthy blood donors were selected as controls.

In the present study, the mean age of patients was  $36.3 \pm 12.6$  years. In the study conducted by Rashidi, the mean age was  $33.23 \pm 15$  years. There were 53.3% females and 46.7% males, which is also comparable with other studies.<sup>5</sup> The most common form of involvement was the classic type of lesions (57.7%), which was consistent with other studies.

In our study, the results of *H. pylori* IgA and IgG antibodies were significantly different between the two groups. These results are similar to several recent studies from Iran and many parts of the world about the relationship between lichen planus and *H. pylori*. In some studies association between LP and *H. pylori* has been approved and in some other studies, this relationship has been rejected.

In a study performed on 27 patients with oral lesions of LP, 7 patients with oral aphthous ulcers, 7 patients with lichen planus, there was not statistically significant difference in the *H. pylori* serology.<sup>6</sup>

In a review by Wedi and Kapp<sup>7</sup> regarding the role of *H. pylori* in patients with skin disease, there was a strong association between LP and *H. pylori* IgA and IgG antibodies, which is consistent with our study.

In the study by Jimenez-Alonso and colleagues on 145 patients with LP the results showed that the pathogenic role of *H. pylori* in psoriasis and lichen planus is very unlikely.<sup>8</sup>

According to the results of this study, serologic titers of *H. pylori* IgA and IgG antibodies, there was a significant difference between patients and controls.

## Suggestions

Based on the results of our study, we consider the pathogenic role of *H. pylori* in LP to be highly probable.

## References

1. Pittelkow MR, Daoud MS. Lichen planus. In: Wolff K, , Goldsmith LA, Katz SI *et al.*, editors. *Fitzpatrick's Dermatology in General Medicine*. 7<sup>th</sup> ed. New York: McGraw-Hill; 2008. P. 244-55.
2. Breathnach SM, Black MM. Lichen planus and lichenoid disorders. In: Burns T, Breathnach S, Cox N, Griffiths C, *Rook's Textbook of Dermatology*. 7<sup>th</sup> ed. Oxford: Blackwell; 2004. P. 42.1-42.32.
3. Shiohara T, Kano Y. Lichen planus and lichenoid dermatoses. In: Bologna JL, Jorizzo JL, Rapini RP, editors. *Textbook of Dermatology*, 1<sup>st</sup> ed. New York: Elsevier; 2003. p. 175-98.
4. Malekzadeh R, Mohamadnejad M, Siavoshi F, Massarrat S. Treatment of Helicobacter pylori infection in Iran: Low efficacy of recommended western regimens. *Arch Iranian Med*. 2004;**7**:1-9.
5. Rashidi T, Alamdari M. Evaluation of serum antibodies against *H. pylori* in patients with recurrent oral aphthosis referred to Taleghani Hospital, Urmia. *Quarterly Skin Diseases*. 2002.
6. Shirazi M. Relationship between Helicobacter pylori infection and oral lesions (tissue, lichen planus, geographic tongue and burning mouth). *Univers Med Technol Res*. 2003;**12**:55.
7. Wedi B, Kapp A. Helicobacter pylori infection in skin disease. *Am J Clin Dermatol*. 2002;**3**:273-82.
8. Jimenes-Alonso I, Iuru S, Carballo F. Association of Helicobacter pylori infection with psoriasis and lichen planus. *J Eur Acad Dermatol Venereol*. 2000;**136**:1275-6.